

Sub A1
The invention claimed is:

1. ~~A conductive transparent layer system with two oxide layers and a silver layer interposed therebetween on a substrate, characterized in that with a surface resistivity R_s of less than $2.9 \text{ } \Omega$, preferably less than $2.5 \text{ } \Omega$, the mean Haacke quality factor ($\Phi_{TC} = T^{10}/R_s$) of the layer system for the wavelengths 435, 545 and 610 nm is greater than $0.085 \text{ } \text{A}^{-1}$.~~

2. The layer system of claim 1, characterized in that with a surface resistivity of $2.5 \text{ } \Omega$, the transparency T at 435 nm is at least 89%, at 545 nm at least 88% and at 610 nm at least 75%.

Sub A2
3. ~~The layer system according to claim 3, characterized in that the layer system is less than 100 nm thick, preferably 80-90 nm, with the silver layer being less than 20 nm thick, preferably 15 nm, and the two oxide layers being less than 50 nm thick, preferably between 30-40 nm.~~

4. ~~The layer system according to claim 4, characterized in that the oxide layers contain indium and cerium, preferably 90-95 at. % indium and 5-10 at. % cerium.~~

5. ~~The layer system according to claim 5, characterized in that the silver layer contains up to 10 wt. % copper, preferably in the range from 0.5-3% and best of all from 0.5-1%.~~

6. ~~The layer system according to claim 1, characterized in that the layer system is less than 100 nm thick, preferably 80-90 nm, with the silver layer being less than 20 nm thick, preferably 15 nm, and the two oxide layers being less than 50 nm thick, preferably between 30-40 nm.~~

7. ~~The layer system according to claim 6, characterized in that the oxide layers contain indium and cerium, preferably 90-95 at. % indium and 5-10 at. % cerium.~~

Sub A2 Conf

8. The layer system according to claim 7, characterized in that the silver layer contains up to 10 wt. % copper, preferably in the range from 0.5-3% and best of all from 0.5-1%.

9. The layer system according to claim 1, characterized in that the oxide layers contain indium and cerium, preferably 90-95 at. % indium and 5-10 at. % cerium.

10. The layer system according to claim 9, characterized in that the silver layer contains up to 10 wt. % copper, preferably in the range from 0.5-3% and best of all from 0.5-1%.

11. The layer system according to claim 1, characterized in that the silver layer contains up to 10 wt. % copper, preferably in the range from 0.5-3% and best of all from 0.5-1%.

12. A method producing a conductive transparent layer system on a substrate, by depositing a first oxide layer on the substrate, a silver layer on the first oxide layer and a second oxide layer on said silver layer, characterized in that the second oxide layer is deposited by means of pulsed DC sputtering or AC-superimposed DC sputtering.

13. The method of claim 12, characterized in that the frequency of the superimposed AC is between 1 and 50 MHz, preferably between 10 and 20 MHz.

14. The method according to claim 13, characterized in that the AC component, defined by the ratio of the DC and AC power supplies, is between 10-90%, preferably between 30-50%.

15. The method according to claim 12, characterized in that the total power density (AC and DC) is in the range from 1-3 W/cm², preferably, however, 2-2.2 W/cm².

16. The method according to claim 12, characterized in that magnetron sputtering is chosen as sputtering method.

17. A conductive, transparent layer system deposited on a substrate, comprising a first oxide layer deposited on the substrate, a silver layer deposited on said first oxide layer, and a second oxide layer deposited on said silver layer, characterized in that the oxide layers contain indium cerium oxide, preferably 90-95 at. % indium and 5-10 at. % cerium.

18. The layer system according to claim 17, characterized in that the silver layer contains up to 10 wt. % copper, preferably in the range from 0.5-3% and best of all from 0.5-1%.

19. The layer system according to claim 18, characterized in that the layer system is less than 100 nm thick, preferably 80-90 nm, with the silver layer being less than 20 nm thick, preferably 15 nm, and the two oxide layers being less than 50 nm thick, preferably between 30-40 nm.

20. The layer system according to claim 17, characterized in that the layer system is less than 100 nm thick, preferably 80-90 nm, with the silver layer being less than 20 nm thick, preferably 15 nm, and the two oxide layers being less than 50 nm thick, preferably between 30-40 nm.

21. The layer system according to claim 17 in which the second oxide layer is deposited by means of pulsed DC sputtering or AC-superimposed DC sputtering.

22. The layer system of claim 21, characterized in that the frequency of the superimposed AC is between 1 and 50 MHz, preferably between 10 and 20 MHz.

23. The layer system of claim 22, characterized in that the AC component, defined by the ratio of the DC and AC power supplies, is between 10-90%, preferably between 30-50%.

24. The layer system of claim 21, characterized in that the total power density (AC and DC) is in the range from 1-3 W/cm², preferably, however, 2-2.2 W/cm².

Sub
A3
cont

25. The layer system of claim 21, characterized in that magnetron sputtering is chosen as sputtering method.